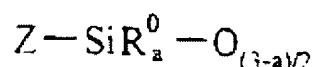


RN98131
Serial number 09/806,629
AMENDMENT

(1) at least one crosslinkable or polymerizable silicone oligomer or polymer which is liquid at room temperature or which is heat-meltable at a temperature of less than 100°C, and which comprises:

at least one unit of formula (FS):



wherein:

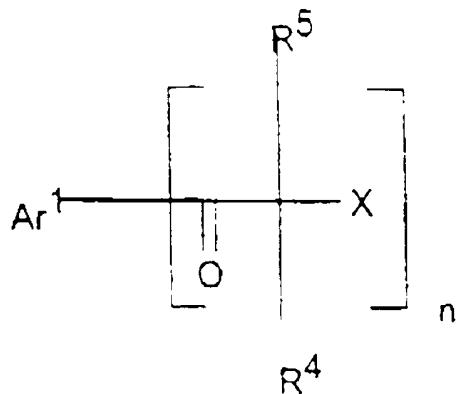
a = 0, 1 or 2,

R^0 , identical or different, represents an alkyl, cycloalkyl, aryl, vinyl, hydroxyl or alkoxy radical,

Z, identical or different, is an organic substituent comprising at least one reactive epoxy, or alkenyl ether or oxetane or dioxolane or carbonate functional group,

and at least two silicon atoms,

(2) at least one aromatic hydrocarbon photosensitizer, having a residual light absorption of between 200 and 500 nm, and selected from the group consisting of the following formulae (IV) to (XXII):



formula (IV)

wherein:

- when $n = 1$, Ar^1 represents an aryl radical containing from 6 to 18 carbon atoms, a tetrahydronaphthyl, thienyl, pyridyl or furyl radical or a phenyl radical carrying one or more substituents selected from the group consisting of F, Cl, Br, CN, OH, linear or branched C_1 - C_{12} alkyls, $-CF^3$, $-OR^6$, $-OPhenyl$, $-SR^6$, $-SPhenyl$, $-SO_2Phenyl$, $-COOR^6$, $-O-(CH_2-CH=CH_2)$, $-O(CH_2H_4-O)_m-H$, and $-O(C_3H_6O)_m-H$, m being between 1 and 100,

when $n = 2$, Ar_1 represents a C_6 - C_{12} arylene radical or a phenylene-T-phenylene radical where T represents $-O-$, $-S-$, $-SO_2-$ or $-CH_2-$,

X represents a group $-OR^7$ or $-OSiR^8(R^9)_2$ or forms, with R^4 , a group $-O-CH(R^{10})-$,

R_4 represents a linear or branched C_1 - C_8 alkyl radical which is unsubstituted or which carries an $-OH$, $-OR^6$, C_2 - C_8 acyloxy, $-CF^3$ or $-CN$ group, a C_3 or C_4 alkenyl radical, a C_6 to C_{18} aryl radical, a C_7 to C_9 phenylalkyl radical,

RN98131
Serial number 09/806,629
AMENDMENT

R⁵ has one of the meanings given for **R**⁴ or represents a radical $-\text{CH}_2\text{CH}_2\text{R}^{11}$, or alternatively forms with **R**⁴ a C₂-C₈ alkylene radical or a C₃-C₉ oxa-alkylene or aza-alkylene radical,

R⁶ represents a lower alkyl radical containing from 1 to 12 carbon atoms,

R⁷ represents a hydrogen atom, a C₁-C₁₂ alkyl radical, a C₂-C₆ alkyl radical carrying an -OH, -OR⁶ or -CN group, a C₃-C₆ alkenyl radical, a cyclohexyl or benzyl radical, a phenyl radical, optionally substituted with a chlorine atom or a linear or branched C₁-C₁₂ alkyl radical, or a 2-tetrahydropyranyl radical,

R⁸ and **R**⁹ are identical or different and each represent a C₁-C₄ alkyl radical or a phenyl radical,

R¹⁰ represents a hydrogen atom, a C₁-C₈ alkyl radical or a phenyl radical,

R¹¹ represents a radical $-\text{CONH}_2$, $-\text{CONHR}^6$, $-\text{CON}(\text{R}^6)_2$, $-\text{P}(\text{O})(\text{OR}^6)_2$ or 2-pyridyl;



formula (V)

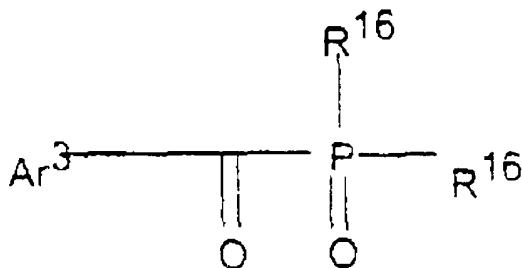
wherein:

Ar² has the same meaning as Ar¹ of formula (IV) in the case where n = 1,

R¹⁵ represents a radical selected from the group consisting of a radical Ar², a linear or branched C₁-C₁₂ alkyl radical, a C₆-C₁₂ cycloalkyl radical, and a cycloalkyl radical forming a C₆-C₁₂ ring with the carbon of the ketone or a carbon of the radical Ar², R¹⁵ being optionally substituted with one or more substituents selected from the

RN98131
Serial number 09/806,629
AMENDMENT

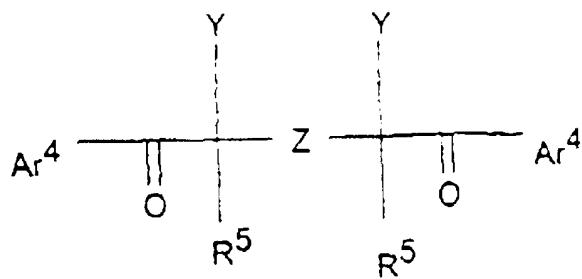
group consisting of -F, -Cl, -Br, -CN, -OH, -CF₃, -OR⁶, -SR⁶, -COOR⁶, the linear or branched C₁-C₁₂ alkyl radicals optionally carrying an -OH, -OR⁶ or -CN group, and the linear or branched C₁-C₈ alkenyl radicals;



• formula (VI)

wherein:

Ar³ has the same meaning as Ar¹ of formula (IV) in the case where n = 1.
R¹⁶, identical or different, represents a radical selected from the group consisting of a radical Ar³, a radical -(C=O)-Ar³, a linear or branched C₁-C₁₂ alkyl radical, a C₆-C₁₂ cycloalkyl radical, R¹⁶ being optionally substituted with one or more substituents selected from the group consisting of -F, -Cl, -Br, -CN, -OH, -CF₃, -OR⁶, -SR⁶, -COOR⁶, the linear or branched C₁-C₁₂ alkyl radicals optionally carrying an -OH, -OR⁶ or -CN group, and the linear or branched C₁-C₈ alkenyl radicals;



RN98131
Serial number 09/806,629
AMENDMENT

formula (VII)

wherein:

- **R⁵**, which are identical or different, have the same meanings as in formula

(III),

- **Y**, which are identical or different, represent X or R⁴,

- **Z** represents:

· a direct bond,

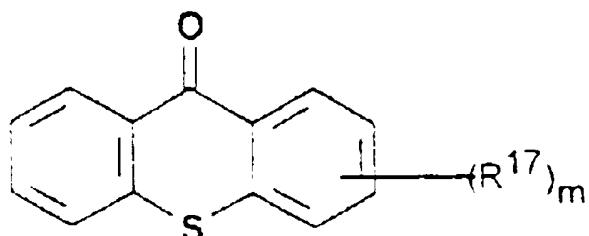
· a C₁-C₆ divalent alkylene radical, or a phenylene, diphenylene or phenylene-T-phenylene radical, or alternatively forms, with the two substituents R⁵ and the two carbon atoms carrying these substituents, a cyclopentane or cyclohexane nucleus,

· a divalent group -O-R¹²-O-, -O-SiR⁸R⁹-O-SiR⁸R⁹-O-, or -O-SiR⁸R⁹-O-,

- **R¹²** represents a C₂-C₈ alkylene, C₄-C₆ alkenylene or xylylene radical,

and **Ar⁴** has the same meaning as Ar¹ of formula (IV) in the case where n = 1.

family of thioxanthones of formula (VIII):



- m = 0 to 8,

- **R¹⁷**, identical or different substituent(s) on the aromatic group, represent a linear or branched C₁-C₁₂ alkyl radical, a C₆-C₁₂ cycloalkyl radical, a radical Ar¹, a

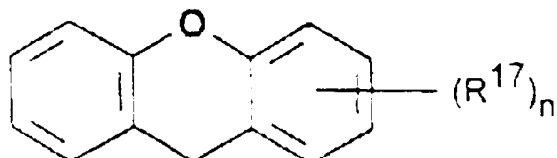
RN98131

Serial number 09/806,629

AMENDMENT

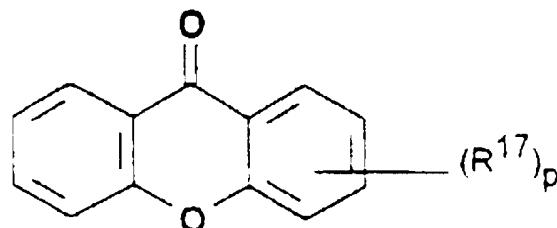
halogen atom, an -OH, -CN, -NO₂, -COOR⁶, -CHO, Ophenyl, -CF₃, -SR⁶, -Sphenyl, -SO₂phenyl, Oalkenyl, or -SiR^{6₃ group.}

family of xanthenes of formula (IX):



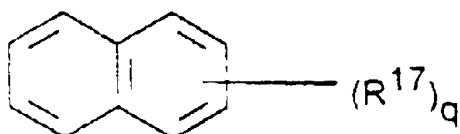
n = 0 to 8

family of xanthones of formula (X):



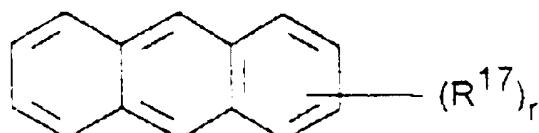
p = 0 to 8

family of the naphthalene of formula (XI):



q = 0 to 8

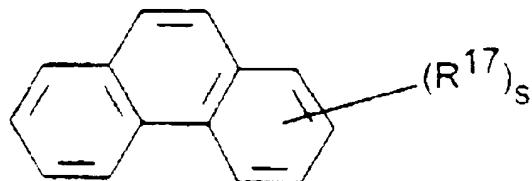
family of the anthracene of formula (XII):



r = 0 to 10

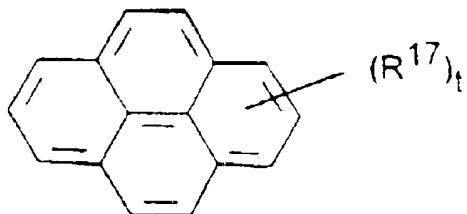
family of the phenanthrene of formula (XIII):

RN98131
Serial number 09/806,629
AMENDMENT



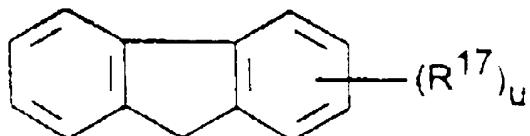
$s = 0 \text{ to } 10$

family of the pyrene of formula (XIV):



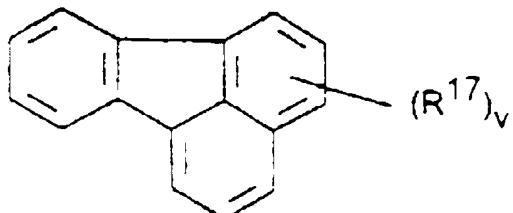
$t = 0 \text{ to } 10$

family of the fluorene of formula (XV):



$u = 0 \text{ to } 9$

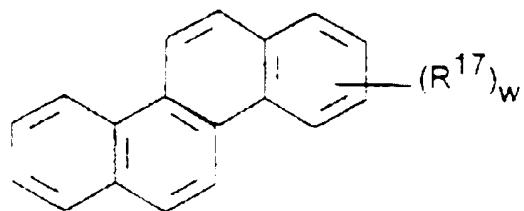
family of the fluoranthene of formula (XVI):



$v = 0 \text{ to } 10$

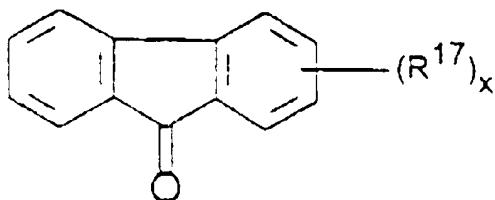
family of the chrysene of formula (XVII):

RN98131
Serial number 09/806,629
AMENDMENT



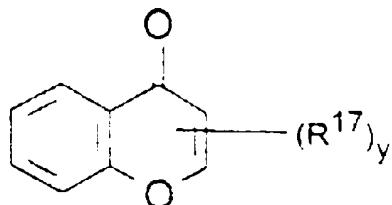
w = 0 to 12

family of the fluorene of formula (XVIII):



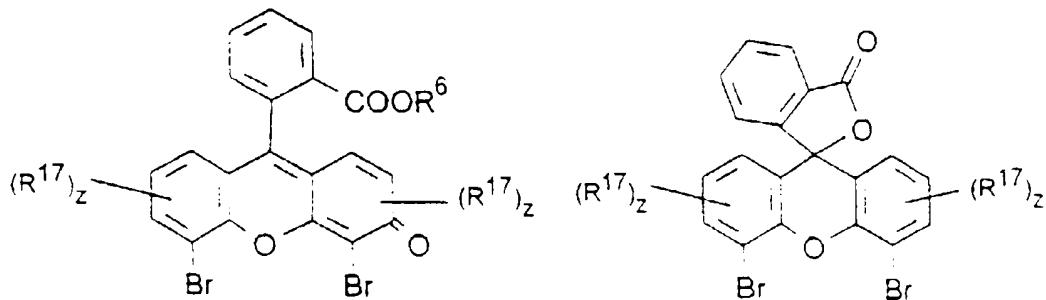
with x = 0 to 8, for example 2,7-dinitro-9-fluorenone,

family of the chromone of formula (XIX):



with y = 0 to 6

family of the eosin of formula (XX):

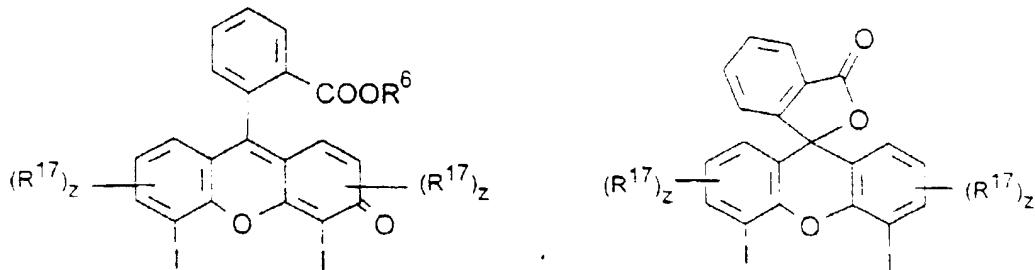


with z = 0 to 5

with z = 0 to 6

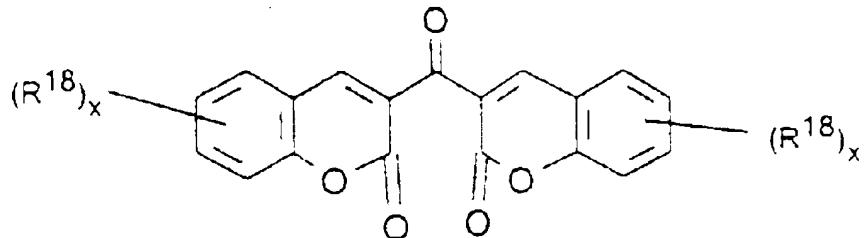
RN98131
Serial number 09/806,629
AMENDMENT

family of the erythrosin of formula (XXI):



with $z = 0$ to 5 with $z = 0$ to 6; and

family of the biscoumarins of formula (XXII):



R^{18} , identical or different, has the same meaning as R^{17} or represents a group – NR^6_2 , or 3,3'-carbonylbis(7-methoxycoumarin).

(3) at least one dental filler present in a proportion of at least 10% by weight relative to the total weight of the composition, and

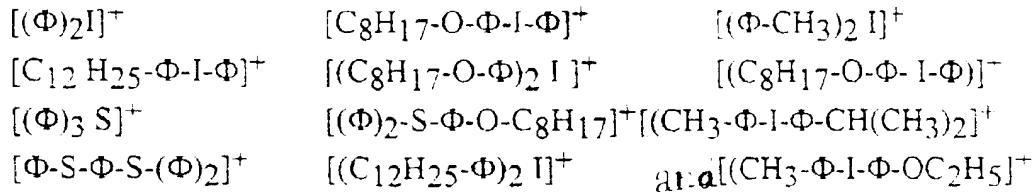
(4) an effective quantity of at least one borate-type photoinitiator, chosen from those:

wherein the R^{16} anionic entity of the borate is selected from the group consisting of:

$1' : [\text{B}(\text{C}_6\text{F}_5)_4]^-$	$5' : [\text{B}(\text{C}_6\text{H}_3(\text{CF}_3)_2)_4]^-$
$2' : [(\text{C}_6\text{F}_5)_2\text{BF}_2]^-$	$6' : [\text{B}(\text{C}_6\text{H}_3\text{F}_2)_4]^-$
$3' : [\text{B}(\text{C}_6\text{H}_4\text{CF}_3)_4]^-$	and $7' : [\text{C}_6\text{F}_5\text{BF}_3]^-$
$4' : [\text{B}(\text{C}_6\text{F}_4\text{OCF}_3)_4]^-$	

; and

wherein the cationic entity of the borate is selected from the group consisting of:



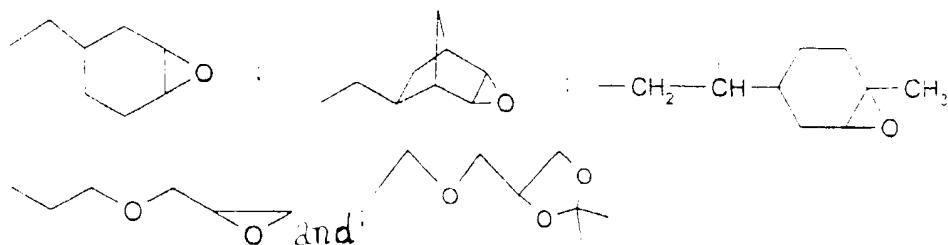
wherein the composition has a volumetric polymerization or crosslinking shrinkage of less than 1.5% v/v.

21. (New) The low shrinking polymerizable or crosslinkable dental composition as claimed in claim 20, wherein the photosensitizer (3) is selected from the group consisting of formulae (IV), (VI), (VIII), (XII) and (X).

22. (New) The low shrinking polymerizable or crosslinkable dental composition as claimed in claim 20, wherein Z is an organic substituent Z1 comprising at least one reactive epoxy, or dioxolane functional group, and at least one reactive epoxy functional group.

23. (New) The low shrinking polymerizable or crosslinkable dental composition as claimed in claim 20, wherein the oligomer or polymer (1) further comprises other reactive functional groups Z selected from the group consisting of reactive alkenyl ether, oxetane and carbonate functional groups Z2.

24. (New) The low shrinking polymerizable or crosslinkable dental composition as claimed in claim 20, wherein the reactive functional group(s) of Z1 is selected from the group consisting of:



25. (New) The low shrinking polymerizable or crosslinkable dental composition as claimed in claim 20, wherein the photosensitizer is selected from the group consisting of:

4,4'-dimethoxybenzoin; 2-4-diethylthioxanthone

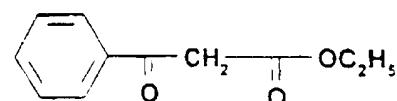
2-ethylanthraquinone; 2-methylanthraquinone;

1,8-dihydroxyanthraquinone; dibenzoylperoxide;

2,2-dimethoxy-2-phenylacetophenone;
benzoin;

2-hydroxy-2-methylpropiophenone;
benzaldehyde;

4-(2-hydroxyethoxy)phenyl-(2-hydroxy-2-methylpropyl)-ketone;
benzoylacetone;



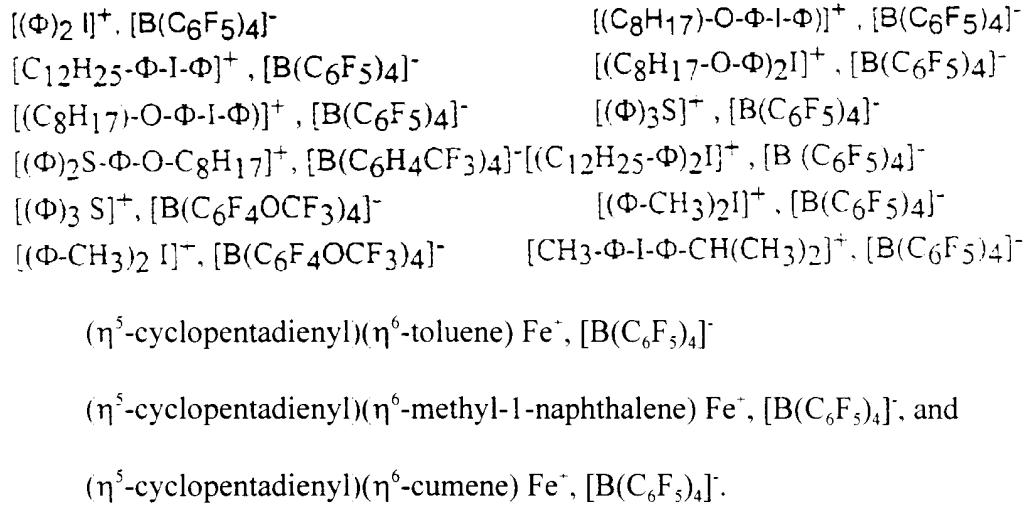
2-isopropylthioxanthone; 1-chloro-4-propoxythioxanthone; and
4-isopropylthioxanthone.

RN98131

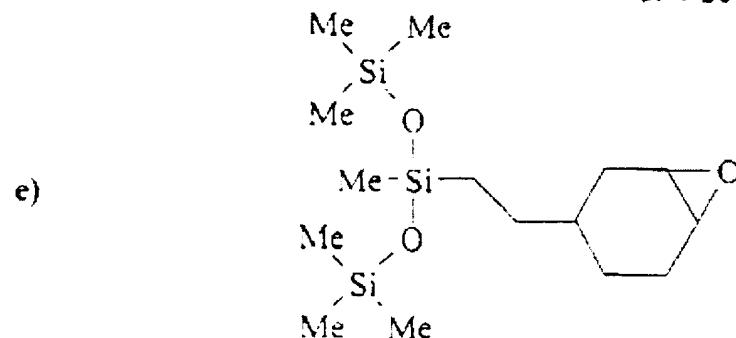
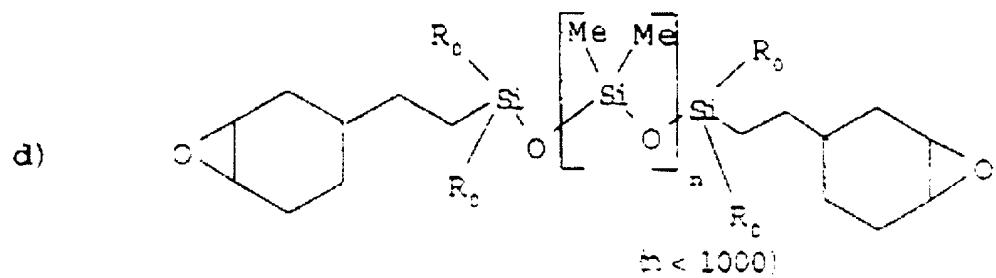
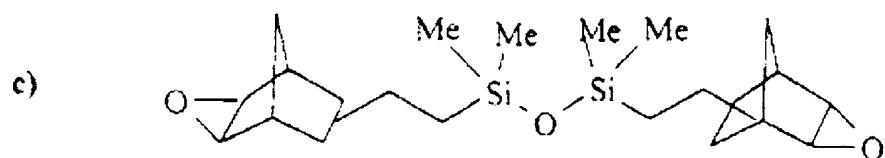
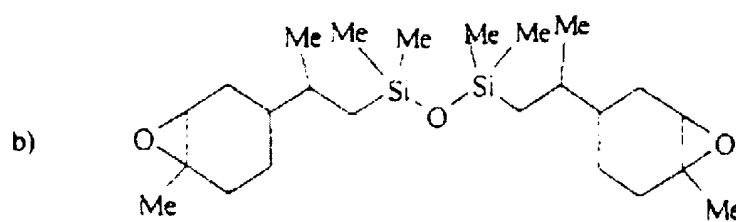
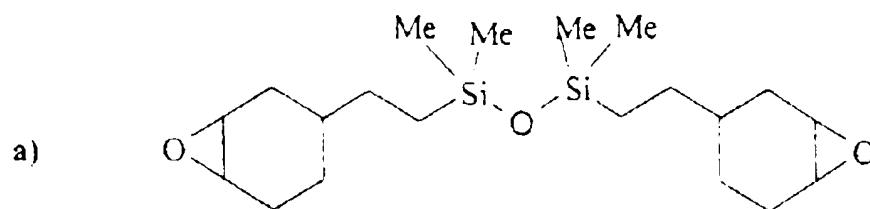
Serial number 09/806,629

AMENDMENT

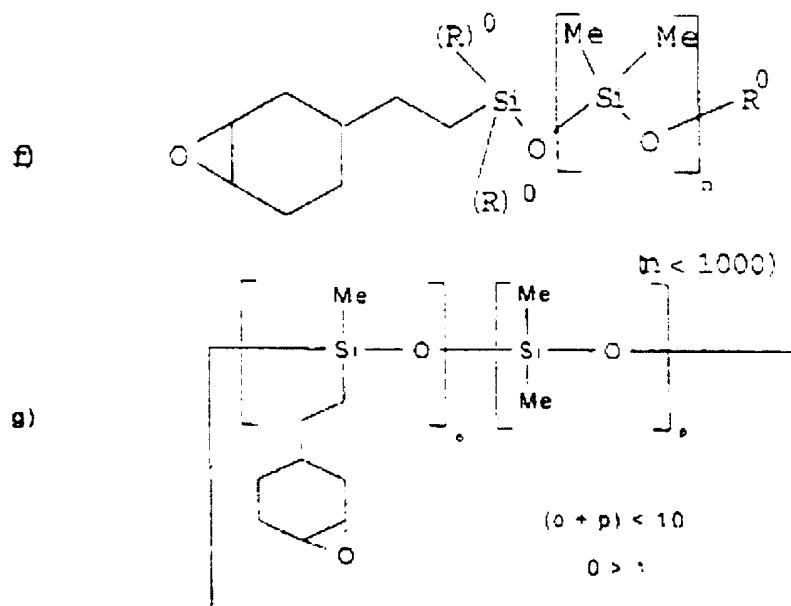
26. (New) The low shrinking polymerizable or crosslinkable dental composition as claimed in claim 20, wherein the photoinitiator is selected from the group consisting of:



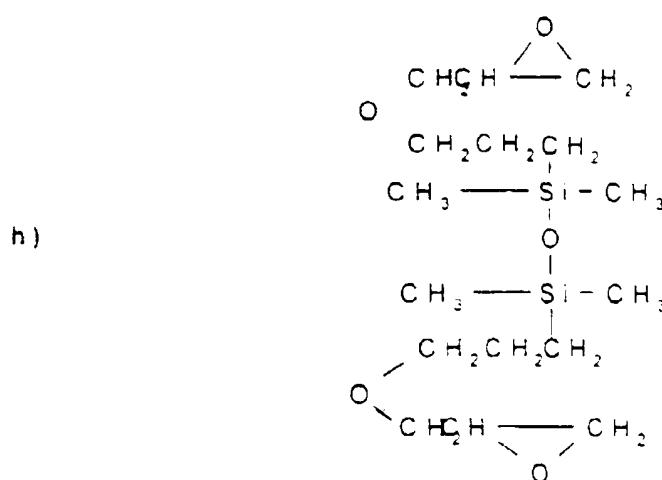
27 (New) The low shrinking polymerizable or crosslinkable dental composition as claimed in claim 20, wherein the silicone oligomer or polymer (1) consists of at least one silicone having the following average formula:



RN98131
Serial number 09/806,629
AMENDMENT



or



28. (New) A process for the preparation of a dental prosthesis or of a dental restoration comprising the step of using the low shrinking polymerizable or crosslinkable dental composition as defined in claim 20.